
CTSW-OT-06-137.17.6
Caltrans

Construction Academy (AKA “Boot Camp”)

Caltrans

Environmental Issues

- Objectives
- Water Pollution Control
- Other Environmental Issues
- Archeological Site
- Summary

Objectives

- The participant will learn:
  - How to identify environmental issues
  - Correct and Incorrect BMP Installations
  - Understand the environmental requirements, policies, and laws that pertain to Caltrans Construction activities

Section 1:
Water Pollution Control

Introduction

- What are the two primary factors that impact waters adjacent to construction sites?
  - Visible Pollutants: Sediment, PCC, Petroleum
  - Non-Visible Pollutants: Solvents, Acids, Fertilizers

Introduction

Construction Site Pollutants

Erosion and Sedimentation

Construction Wastes

Introduction

- Forty percent of all U.S. waters are not fishable or swimmable, according to the U.S. EPA

- "Even a partial accounting shows that hundreds of millions of dollars are lost each year….due to urban stormwater pollution"

Natural Resources Defense Council

Introduction

- Construction site erosion can be 10 to 1,000 times greater than nature's erosion process

  Ohio Department of Transportation

The Law

- Discharge of polluted storm water, into waters of the U.S. is prohibited

- The National Pollutant Discharge Elimination System (NPDES) permit regulate discharges to waters of the U.S.

Who Enforces These Laws?

- EPA
- SWRCB / RWQCB
- Other Agencies

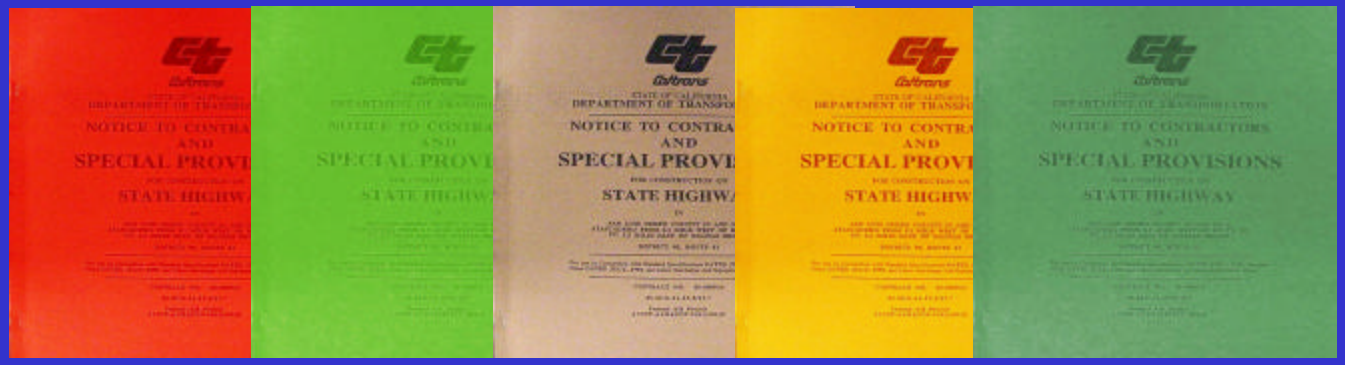
- **Private Citizens**
  - NRDC
  - Baykeepers
  - Other Watchdog
  - Groups

What If We Don't Comply?

- Fines to $32,500 Per Day – Per CWA
- Fines to $15,000 Per Day and $20 a gallon – Per Porter Cologne Act
- Current Regulatory Atmosphere
  - Violators will be held accountable

Contract Special Provisions

- **Contract Special Provisions - Section 10**
  - Requires compliance with the NPDES Permit requirements
  - Requires the use of Caltrans Storm Water Quality Handbooks
  - Defines water pollution control requirements



Manuals

- Caltrans Storm Water Quality Handbooks
  - Project Planning and Design Guide
  - SWPPP / WPCP Preparation Manual
  - Construction Site BMPs Manual
    - **Get Manuals online at http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm or hard copies are available from Caltrans Publications**
- Construction Manual
- Construction Site BMP Field Manual and Troubleshooting Guide
- Dewatering Guide
- Guidance for Temporary Soil Stabilization

Construction Site Best Management Practices - BMPs

Objectives:

- ☒ Promote Good Housekeeping
- ☒ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas

Construction Site Best Management Practices - BMPs

Objectives:

- ☒ Protect Slopes and Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

Construction Site Best Management Practices - BMPs

- BMP defined – a technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of storm water runoff in the most cost-effective manner
- Sometimes referred to as temporary control practices

BMP Installation

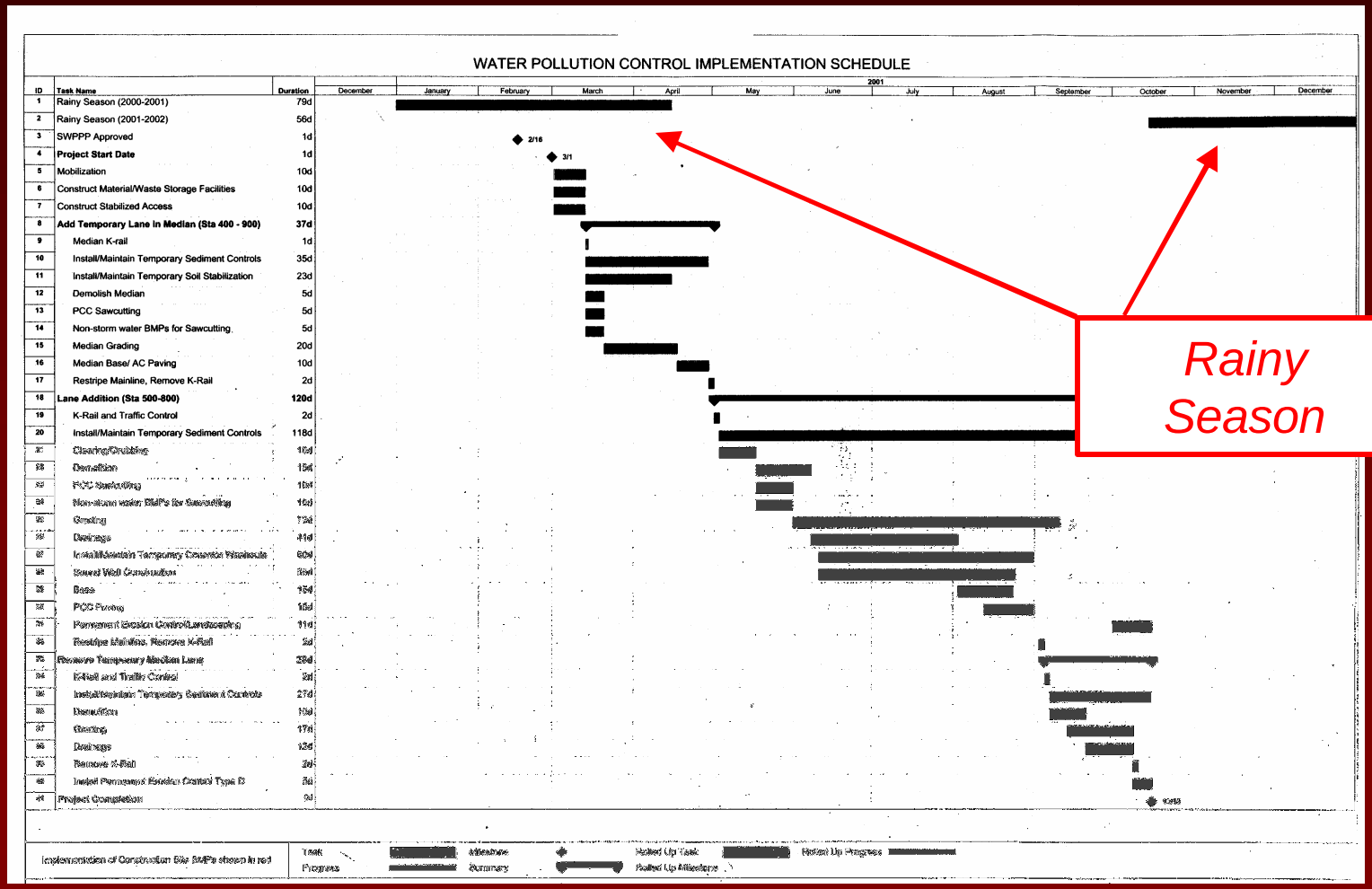
BMP Categories

- Temporary Soil Stabilization
- Temporary Sediment Control
- Wind Erosion Control
- Tracking Control
- Non-Storm Water Management
- Waste Management and Materials Pollution Control

BMP Use - Soil Stabilization

SS-1 Scheduling

Example of Graphical Schedule



BMP Installation - Soil Stabilization

SS-3 Hydraulic Mulch

Hydraulically applied paper mulch

Caltrans Requirements

- Mulch must be approved by RE or CSWC
- Prior to application, roughen embankment and fill areas
- Hydraulic matrices need 24 hours to dry before rainfall occurs to be effective unless approved by the RE
- Application rates per SS-3

BMP Installation - Sediment Controls

Sediment Controls plus Soil Stabilization
= An effective combination

BMP Installation - Sediment Controls
SC-3 Sediment Trap

Requirements

- Size limited by availability of right-of-way
- Not appropriate for drainage areas greater than 5 acres
- If captured runoff has not completely infiltrated within 72 hours dewater trap
- Fencing, in accordance with Standard Spec Section 80-"Fencing", shall be provided to prevent unauthorized entry

Sediment Trap without required fencing

Wind Erosion Control

ID	BMP Name
WE-1	Wind Erosion Control

BMP Installation - Tracking Control
TC-1 Stabilized Construction Entrance / Exit

Lack of stabilized entrance / exit

BMP Installation - Non-Storm Water NS-2 Dewatering Operations

Caltrans Requirements

- Notify District Construction Storm Water Coordinator
- Use Caltrans' Field Guide to Construction Site Dewatering
- Use where groundwater or accumulated precipitation will be discharged from site
- Addresses sediment only
- Notify RE if pollutant other than sediment is present
- Must comply with applicable permits

BMP Installation – Non-Storm Water
NS-6 Illicit Connection / Illegal Discharge

Caltrans Requirements

- Can be in liquid or solid form
- Refers to discharges and dumping caused by parties other than contractor
- Inspect site before beginning of job
- Proceed with caution – notify RE, and CSWC at time of discovery

BMP Installation - Waste Management
WM-1 Material Delivery and Storage

Well maintained temporary containment facility

Substances that require storage in a containment facility

Caltrans Requirements

- Facility shall provide for a spill containment volume able to contain precipitation from a 24-hour, 25-year storm, plus 10% of the aggregate volume of all containers or 100% of the capacity of the largest container whichever is greater
- Facility shall be impervious to the materials for 72 hours

BMP Installation - Waste Management
WM-1 Material Delivery and Storage

Temporary containment facility for fuel

Caltrans Requirements

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, and 302 require containment
- During rainy season provide permanent cover and side wind protection

BMP Installation - Waste Management
WM-8 Concrete Waste Management

Controlled concrete washout

Uncontrolled concrete washouts

Maintenance of BMPs

Maintenance of BMPs is a critical requirement for an effective water pollution control program

Water Quality Sampling and Analysis

- First things first
  - Caltrans personnel will not be collecting any samples – this is the responsibility of the contractor or their lab
  - Sampling and Analysis requirements apply only to SWPPP projects

Water Quality Sampling and Analysis

- What are these new Sampling and Analysis requirements intended to do?
  - The new requirements are intended to determine if BMPs implemented on the construction site are effective for preventing sediment/silt and other non-visible pollutants from impacting water quality objectives

Water Quality Sampling and Analysis

Pollutants Requiring Sampling

Sediment

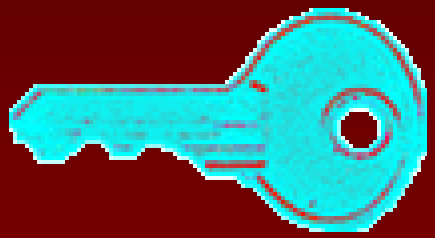
Non-Visible

Water Quality Sampling and Analysis

- Non-Visible Pollutants
  - They are not visually detectable in storm water discharges
    - Examples: Acids, Solvents, Lime, Gypsum, Copolymer
      - Toxic properties: Caustic, Carcinogenic, Flammable etc..

Water Quality Sampling and Analysis

- **Make sure potential non-visible pollutants are:**
  - **Cleaned-up**
  - **Covered**
  - **Contained**



- **C^3**

Construction Period Responsibilities

- Cover as topic item in pre-Construction meeting
- Review & approve plan
- Inspections - Caltrans self enforcement
- Request, review, & approve amendments for plan deficiencies

Construction Period Responsibilities

- Report illegal dumping
- Complete annual certificates (June 15th)
- Report non-compliance events to RE
- Complete Notice of Completion of Construction (NCC) at end of Construction

Inspections

- **Frequency**
  - **Prior to anticipated storm events**
  - **During extended storm events (once each 24-hour period)**
  - **After actual storm events**
  - **As specified in the Special Provisions**

Notice Of Discharge

- Action required upon discovery of a discharge or if the project receives a written notice or order from any regulatory agency

- Failure to report is subject to $32,500 fine

Documentation

File Organization

- Category 20
- Inspections - Daily Reports
- Correspondence
- Certifications – Annual due June 15
- SWPPP / WPCP
- Amendments
- Photographs
- Notice of Completion
- Retain for Three Years